



CONSTRUCTION VALUE ENGINEERING CONCEPT PROPOSAL  
MISSOURI DEPARTMENT OF TRANSPORTATION

Date 3-4-08

Contract ID 071221-901

Job No. J9S0557

County Iron/St. Francois

Route 221

Original Bid Cost \$4,414,854.57

Contractor Chester Bross Construction Company

By Dan Buckman

Designed By Dan Buckman

Phone 573-221-5958

*VE # 08-12*

1. Description of existing requirements and proposed change(s). Advantages/Disadvantages

Class III Reinforced Concrete Pipe Line No.'s 0440, 0450, 0450, 0470, 0480, 0490. Precast concrete Flared End Section Line No.'s 0500, 0510, 0520, 0530, 0540, 0550. Propose to use HDPE with metal Flared End Sections. See attached advantages.

2. Estimate of reduction in construction costs. \$30,815.00

3. Prediction of any effects the proposed change(s) will have on other department costs, such as maintenance and operations.

No additional costs anticipated.

4. Anticipated date for submittal of detailed change(s) of items required by Section 104.6 of the Specifications.

3-07-08

(date)

5. Deadline for issuing a change order to obtain maximum cost reduction, noting the effect of contract completion time or delivery schedule.

3-14-08

(date)

Completion stays the same

(effect)

6. Dates of any previous or concurrent submission of the same proposal.

None

(date and/or dates)

**Advantages:**

The primary advantages to this proposal besides the cost savings are the safety issues surrounding the delivery, handling at delivery, rehandling at installation and the speed of daily installation one half roadway width at a time.

The inherent problems associated with the RCP are no place to pull delivery trucks off to unload pipe sections at each of the 51 different locations throughout the project. A central staging area will be required which means pipe will have to be double handled. The RCP requires larger equipment to handle and install, resulting in more time tying up traffic in lane closures.

We believe the cost savings and reduced exposure to traffic hazards justify the substitutions to the HDPE pipe for the crossroad pipe applications.

Contract ID: 071221-901

Project Number J9S0557

Iron & St. Francois Counties

Value Engineering Proposal

Substitution of HDPE pipe for Class III RCP

REINFORCED CONCRETE PIPE TO HDPE

|                                     | 18"<br>LF   | 24"<br>LF  | 30"<br>LF  | 36"<br>LF | 42"<br>LF | 48"<br>LF | TOTAL<br>COST<br>SAVINGS |
|-------------------------------------|-------------|------------|------------|-----------|-----------|-----------|--------------------------|
| Original Contract Unit Cost (RCP) = | \$51.00     | \$57.50    | \$80.75    | \$145.00  | \$137.00  | \$188.00  |                          |
| Estimated Unit Cost for HDPE Pipe = | \$38.00     | \$47.00    | \$75.50    | \$140.00  | \$130.50  | \$177.00  |                          |
| (From the Contractor)               |             |            |            |           |           |           |                          |
| Qty (LF) converting to HDPE =       | 832         | 612        | 242        | 77        | 119       | 34        | 1,916                    |
| Total Cost Savings =                | \$10,816.00 | \$6,426.00 | \$1,270.50 | \$385.00  | \$773.50  | \$374.00  | \$20,045.00              |

FLARED END SECTIONS

Precast Reinforced Concrete to Metal

|   | 18"<br>EA  | 24"<br>EA  | 30"<br>EA  | 36"<br>EA  | 42"<br>EA  | 48"<br>EA  | TOTAL<br>COST<br>SAVINGS |
|---|------------|------------|------------|------------|------------|------------|--------------------------|
| Original Contract Unit Cost (Concrete) =    | \$477.50   | \$560.00   | \$735.00   | \$1,060.00 | \$1,220.00 | \$1,400.00 |                          |
| Estimated Unit Cost for HDPE Pipe (Metal) = | \$385.00   | \$480.00   | \$620.00   | \$930.00   | \$1,040.00 | \$1,260.00 |                          |
| (From the Contractor)                       |            |            |            |            |            |            |                          |
| Qty (EA) converting to HDPE =               | 42         | 32         | 19         | 6          | 6          | 2          |                          |
| Total Cost Savings =                        | \$3,885.00 | \$2,560.00 | \$2,185.00 | \$780.00   | \$1,080.00 | \$280.00   | \$10,770.00              |

Cost Savings

Pipe = \$20,045.00

Flared End Sections = \$10,770.00

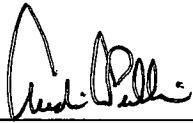
Total Cost Savings = \$30,815.00

Additional Comments:

**\*\* Portion Below This Line To Be Filled Out by MoDOT \*\***

Comments:

SEE ATTACHED SHEET



AUDIE A. PULLIAM

Submitted By Resident Engineer

3/10/08

Date

Comments: WE CONCUR WITH RESIDENT ENGINEERS COMMENTS.

☐ Approval  
Recommended

☒ Rejection  
Recommended



District Engineer

3/14/08

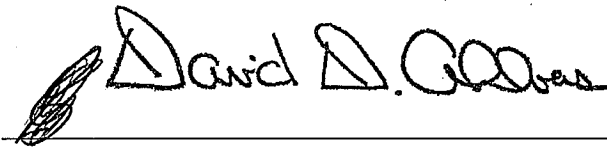
Date

Comments:

By specification HDPE is not allowed in Group A as an alternate, therefore this VE is rejected.

☐ Approval

☒ Rejection

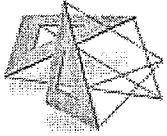


State Construction and Materials Engineer

3-17-08

Date

Distribution: Resident Engineer, District Operations Engineer, State Construction and Materials Engineer  
\*Value Engineering Administrator - \*MoDOT, P.O. Box 270, Jefferson City, MO 65102



Audie A Pulliam /D9/MODOT  
03/10/2008 02:06 PM

To Edward J Hess/D9/MODOT@MODOT  
cc  
bcc  
Subject VE Proposal - Route 221- J9S0557

Ed,

Attached is the VE Proposal we discussed for the substitution of HDPE pipe for RCP on the above project. My comments are as follows.

While I understand the difficulties the contractor will encounter in the installation of RCP, I believe the proven longevity and durability of RCP make it the better choice. While it is easier to handle because of its weight, HDPE requires a more time consuming bedding process that is very critical to the long term performance of the pipe itself. In the typical installation situation for this project, the need to maintain traffic flow and reopen lanes quickly could easily lead to faulty installation procedures that could create significant maintenance issues in the future. A savings of approximately \$15000 would be insignificant compared to the costs (to both travellers and MoDOT) of correcting problems in the future.



VE Proposal.pdf

Audie A. Pulliam  
Resident Engineer  
Van Buren Project Office  
Ph. (573) 323-4310  
Fax (573) 323-4520

# CHESTER BROSS CONSTRUCTION COMPANY



P.O. Box 430  
Hannibal, MO 63401

Chester Bross, President  
*"Equal Opportunity Employer"*

Ph: 573-221-5958  
Fax: 573-221-1892

March 5, 2008

Mr. Audie Pulliam  
MODOT  
HCR 1, Box 99C  
Van Buren, MO 63965

RE: Job No. J9S0557  
Rt. 221 – Iron/St. Francois County

**MODOT DISTRICT 9**

**MAR 10 2008**

**VAN BUREN CONST.**

Dear Mr. Pulliam:

The attached Value Engineering Proposal with supporting documentation is for your review and consideration. We would appreciate your earliest concurrence as we feel there is a major safety issue with the RCP Pipe installation the way this job is staged.

If you have any questions, please contact me at (573) 221-5958.

Sincerely,

A handwritten signature in black ink, appearing to read 'Dan Buckman'. The signature is fluid and cursive, with a prominent 'D' and 'B'.

Dan Buckman  
Project Manager

# VALUE ENGINEERING CHECK SHEET

## *TYPE OF WORK*

(Check one that applies)

- ☐ Bridge/Structure/Footings
- ☒ Drainage Structures (RCP, RCB, CMP's, ect.)
- ☐ TCP/MOT
- ☐ Paving (PCCP, ect.)
- ☐ Grading/MSE Walls
- ☐ Signal/Lighting/ITS
- ☐ Misc. \_\_\_\_\_

## *SUMMARY OF PROPOSAL*

(If needed, condense summary to a couple of lines)

Contractor proposes to use High Density Polyethylene (HDPE) pipe in lieu of Reinforced Concrete Pipe (RCP).

## *SCANNING OF DOCUMENT*

If the proposal is large, please mark or make note, which pages need to be scanned into the database. If there are special instructions, make note of them here.

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